

radially lithospermeous with the flat or
small areola on a flat receptacle.

Conchium compressed lymphatic
Dorago Trachystemon Anethum Lycopodium
Utricularia

Lithospermeous have first Pulmonaria
and Allium which are almost Anethum
then Mentzelia Endogonia Myrica
Menispermata (Menispermata) with abradate racemes
Antiphyllum Macromeria Onocrotium
Mithra lithospermeous Anethum
Allurotonia Lobostemon Echinum
Dorogon and Crotalaria with bracteate
racemes

Therefore I go further a word about
gynobasis I am much puzzled about
what to call it - It is the same when
quite flat as in Echinum or style like in
Echinum Erechtium (Ruprechtia) as you well
observe but it is not strictly a gynobasis.


I take it that the prolongation of the
summit of the pedicel or floral receptacle
above the floral whorls so as to raise the
carnels is called gynobasis when it is
flat and vertically so as to become a

25. WILTON PLACE.
S.W.

Dec 7/74

My dear Gray

Your of the 11th inst with
proofs of notes on Dorogonium recd
this morning was very welcome I
have now so far advanced in the
order as to have made up my mind
as to the general arrangement except
Cynoglossum & a few small allied
genera which I have not yet

I have 4 tribes Cordia Erechtium
Heliotropium & Dorago - the three former
with terminal style the latter with
the style basal or between prominent
lobes of the ovary - Cordia characterised
as usual Heliotropium by the stigma
although it is not quite constant
In Tournefortia corniculata and a few
others the style is like this without
any rays and at the end - in  apparently stigmatic
a newly allied

species, there is a very small ring
which is more conspicuous in another
passing into the normal one of *T.*
Agarico

I keep *Coldenia* and *Heliotropium*
large and comprehensive as you
have done but I think *Orthostemon*
or *Chalcidena* makes a good section
distinct from *Eubeliotropium*, but
as I cannot work up all the species
I am not particular about sections
- I cannot keep up *Leptocladia* as a
genus - *H. mexicanum* & *H. europaeum*
can never be put into separate
genera - my section *Platytype* for
H. caracasense is not a good one
several other species have nearly or
quite that stigma - annular as in the
whole genus but the central apiculus
very little prominent so as to give the
whole stigma a peltiform or almost
umbrella shape - I do not keep up
Helioxytion but think I must
retain *Cochrania* for the nutlets

are perfectly consolidated in pairs
with two so-called pyrenes or carpels

An approach to the *Heliotropoid*
stigma is in several *Leptocladia*
the two globular stigmas separated
by the beak end of the style sometimes
twice as long as the stigmas sometimes
very short or quite disappearing

Now as to *Doraxia* - the genera
run into each other woefully but
that we may have ^{three or} four sections
first *Echinopernum* and its allies
with a conical or columnar receptacle
which perhaps may associate with
Cynoglossum etc which I have not
sufficiently looked at

then perhaps genera like *Orthostemon*
platytype - perhaps *disperys* with the
conical or protruding receptacle with
ventrally attached nutlets as in *Echinopernum*
mex. etc but the areole concave and
bordered as in *Chalcidena*

then *Chalcidena* with the nutlets
with a concave and bordered areole but
borne on a flat receptacle

prominent border is
return the border
outgrowth in the
of ripening tissue





ring 2 which has separated circumscissily
from a correspondingly prominent ring on
the receptacle and within this ring
when the nut is fully ripe and falls off
there is a concavity both in the nut
and in the part that has remained
persistent on the receptacle. Moreover
attached to the concavity usually of the nut
sometimes of the receptacle there is a
shriveled white substance usually called
a strophiola or corkencrust, but which
is nothing of the kind ^{whether} a strophiola means
a dilatation of the funicle or a production
of the testa of the seed round the funicle.
Looking at the nuts before they are ripe
the cavity between the nut and the
receptacle does not exist it is only at
the ~~edge~~ ^{edge} ~~hard~~ ^{hard} that outer ring
in which on the ~~edge~~ ^{edge} ~~hard~~ ^{hard} that the
inner substance gradually dries up and
forms this unmeaning appendage which
I do not well know what to call.

The real funicle in most *Dioryzae*

is this
is an
is a hard


is filiform and passes through a very small
hole in the ^{bottom of the} hardened shell of the nutlet
on the side next the style. I have sometimes
traced it almost to the base of the style
In many *Dioryzae* the little hole is
very conspicuous you mention it in
Eritrichium floribundum.

Eritrichium is I think properly excluded
in your sketch to include *Koqia* - I
must exclude however *Di.* sections
Procharis and *Endogonia* - ~~Decidua~~
Procharis are true *Mertensia* *Di.*
small flowered species & the *Endogonia*
make a genus between *Mertensia* and
Myrotilis. The nutlets are either  or
 or something of the kind attached
by almost a point and usually stipular
on a flat or nearly flat receptacle and
smooth and shining or pubescent
usually angular. The species are I
believe all either east Asiatic or Japanese.
I must take Turczaninow's name *Endogonia*
only I recognize it in some other
published genus not yet identified.
You ask if *Torrey* (not Wilkes, N.S.P.) *E.*
musculatum is *Myrotilis musculata* Hook & A.

The answer is certainly not but it appears
to be the same as Coulter's n. 500 and one
of Nuttall's just coming out flower named
by him *elyorata* ^{divulga} *Scouleri* plant
M. mucronata Hook & Arn. is quite different
It is larger, the terminal ovary on a
long peduncle, rather dense, with several
bracteoles (leaves) starting from the same
point, the flower larger with a broad
limb and the nuts considerably mucronate.

Are you aware that the original
~~Quercus~~ *Aminoclea lyopsidea* is not the
Lithospermum lyopsidea Schum in Hook & Arn.
amer from Scouler - the latter differs from
the rest of the genus in the flower being
all axillary or accompanied by leaf
bracts and the corolla lobes are narrow
and almost induplicate. It has however
the true *Aminoclea scabra*.

I cannot identify the Mexican
butyrifera - it *linifolium* I have
already examined and I believe with
Weddell put it into *retrofractum* the Brazilian
ones are quite distinct. Saffordiana all
the leaves opposite, bracteoles *infraxillaria*
flowers and nuts (stipitate on a flat receptacle)
near by of *chlorotricha* (allertia).

stipes to the pedicel or pedicels, did when it
is dilated horizontally beyond the carpel or
more or less enclosing them - Now the part
in question in *Boragin* is neither but is
composed of the receptacle closely combined
with the persistent base of the pedicel in the
flower we have usually  this the
two lobes of each pair belonging to
one carpel must of course be connected
with each other and with the style and
therefore the apex or all homogeneous
mass must consist partly of the base
of the carpels, but we cannot say how
much is carpel how much is receptacle
for there is no line of separation. On
consulting with Dr Hooker we think it best
when speaking of the ovary to call the
support did which it chiefly consists of
(for we cannot adopt a theoretical term
in botany) - and when in fruit as the whole
persistent part becomes clearly distinct
from the nutlets (or woody portions only
of the fruit) we call it receptacle.

There is another difficulty in termi-
nology in the so-called persistent nuts
that is those in which the areola of attach-
ment is concave and surrounded by

Pray send as soon as you can the
proofs of what you print on the
gamopeltoid and any observations
you make, as I am preparing on as
hard as I can work.

If you can manage to keep
Eutonia distinct from Phacelia and
not separate naturally allied species
to associate them with it, I
should be ready to adopt the
distinction - but *Armanthus*
Stellaria, etc cannot be natural,
kept up.

I have been today 8th at Groggum
etc. - I see Rindera must include *Stellaria*
I must keep up *Paracorymbis* except one
or two species I think Poiret is wrong
in taking from *Stellaria* - Groggum
remains large and includes several
that have been wrongfully put into
Echinopernum - I think I shall keep up
Omphalodes as limited by Poiret but
have not yet examined it

Ever yours, George Dontham